



GasAlert Extreme

O₂, CO, H₂S, PH₃, SO₂, Cl₂, NH₃, NO₂, HCN, ETO, ClO₂, O₃, or NO



Single Gas Detector

User Manual

"INNOVATORS IN GAS DETECTION"



Limited Warranty & Limitation of Liability

BW Technologies LP (BW) warrants this product to be free from defects in material and workmanship under normal use and service for a period of two years, beginning on the date of shipment to the buyer. This warranty extends only to the sale of new and unused products to the original buyer. BW's warranty obligation is limited, at BW's option, to refund of the purchase price, repair, or replacement of a defective product that is returned to a BW authorized service center within the warranty period. In no event shall BW's liability hereunder exceed the purchase price actually paid by the buyer for the Product.

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- a) fuses, disposable batteries or the routine replacement of parts due to the normal wear and tear of the product arising from use;
- b) any product which in BW's opinion, has been misused, altered, neglected or damaged by accident or abnormal conditions of operation, handling or use;
- c) any damage or defects attributable to repair of the product by any person other than an authorized dealer, or the installation of unapproved parts on the product; or

The obligations set forth in this warranty are conditional on:

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- b) the buyer promptly notifying BW of any defect and, if required, promptly making the product available for correction. No goods shall be returned to BW until receipt by the buyer of shipping instructions from BW; and
- c) the right of BW to require that the buyer provide proof of purchase such as the original invoice, bill of sale or packing slip to establish that the product is within the warranty period.

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GasAlert Extreme

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GasAlert Extreme

Introduction

⚠ Warning

To ensure your personal safety, read “Safety Information” before using the detector.

The GasAlert Extreme gas detector (“the detector”) warns of hazardous gas at levels above a factory set alarm setpoint. This product is a gas detector, not a measurement device.

The detector is a personal safety device. It is your responsibility to respond properly to the alarms.

Table 1 lists the GasAlert Extreme models. This manual includes examples from each model.

Table 1. GasAlert Extreme Models

Model	Gas Monitored
GasAlert Extreme O ₂	Oxygen (% by volume)
GasAlert Extreme CO	Carbon monoxide (ppm) Low H ₂ sensitivity
GasAlert Extreme CO	Carbon monoxide (ppm)
GasAlert Extreme H ₂ S	Hydrogen sulfide (ppm) High range

Model	Gas Monitored
GasAlert Extreme H ₂ S	Hydrogen sulfide (ppm)
GasAlert Extreme H ₂ S	Hydrogen sulfide (ppm) Low methanol
GasAlert Extreme PH ₃	Phosphine (ppm)
GasAlert Extreme SO ₂	Sulfur dioxide (ppm)
GasAlert Extreme Cl ₂	Chlorine (ppm)
GasAlert Extreme NH ₃	Ammonia (ppm)
GasAlert Extreme NH ₃	Ammonia (ppm) High range
GasAlert Extreme NO ₂	Nitrogen dioxide (ppm)
GasAlert Extreme HCN	Hydrogen cyanide (ppm)
GasAlert Extreme ETO	Ethylene oxide (ppm)
GasAlert Extreme ClO ₂	Chlorine dioxide (ppm)
GasAlert Extreme O ₃	Ozone (ppm)
GasAlert Extreme NO	Nitric oxide (ppm)

Contacting BW Technologies

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Email us at: info@bwtnet.com

Visit BW Technologies' web site at: www.gasmonitors.com

ISO 9001

Safety Information - Read First

Use the detector only as specified in this manual, otherwise the protection provided by the detector may be impaired.

International symbols used on the detector and in this manual are explained in Table 2.

Read the **Warnings** and **Cautions** on the following pages before using the detector.



This instrument contains a lithium battery. Do not mix with the solid waste stream. Spent batteries should be disposed of by a qualified recycler or hazardous materials handler.

Caution

To avoid possible personal injury:

- ⇒ **Warning:** Substitution of components may impair Intrinsic Safety.
- ⇒ **Warning:** To prevent ignition of flammable or combustible atmospheres, disconnect power before servicing.
- ⇒ Do not use the detector if it is damaged. Before using the detector, inspect the case. Look for cracks or missing plastic.
- ⇒ If the detector is damaged or parts are missing, contact [BW Technologies](#) immediately.
- ⇒ Make sure the back is closed and fastened before operating the detector.
- ⇒ Use only a sensor specifically designed for your GasAlert Extreme model. Refer to [Replacement Parts and Accessories](#).
- ⇒ Make sure the sensor screen is not blocked.
- ⇒ Periodically test the sensor's response to gas by exposing the detector to a targeted gas concentration that exceeds the high alarm setpoint. Manually verify that the audible and visual alarms are activated.
- ⇒ Calibrate the detector before first-time use, and then at least once every 180 days. (For HCN detectors, calibrate once every 90 days.)
- ⇒ Do not turn off the detector during a work shift. Turning off the detector resets the TWA (time-weighted average), STEL (short-term exposure limit), and maximum gas exposure values to 0. Refer to [Alarms](#).
- ⇒ Use only the following battery: Energizer 1CR2. Refer to [Replacing the Battery or Sensor](#).
- ⇒ To reduce the risk of ignition of a flammable atmosphere, batteries must only be changed in an area known to be nonflammable.

⚠ Caution

To avoid possible damage to the detector:

- ⇒ Do not expose the detector to electrical shock and/or severe continuous mechanical shock.
- ⇒ Do not attempt to disassemble, adjust, or service the detector unless instructions for that procedure are contained in the user manual and/or that part is listed as a replacement part. Use only BW Technologies [Replacement Parts](#).
- ⇒ The detector warranty will be voided if customer personnel or third parties damage the detector during repair attempts. Non-BW Technologies repair/service attempts void this warranty.
- ⇒ The oxygen GasAlert Extreme detector is classified by Underwriters Laboratories Inc. up to an atmosphere of 21% oxygen.

Table 2. International Symbols

Symbol	Meaning
	Classified to both U.S. and Canadian Safety standards by Underwriter's Laboratories, Inc.
	Conforms to European Union Directives
	European Explosives Protection
ATEX	Conforms to European ATEX Directives
IECEx	International Electrotechnical Commission Scheme for Certification to Standards for Electrical Equipment for Explosive Atmospheres

Getting Started

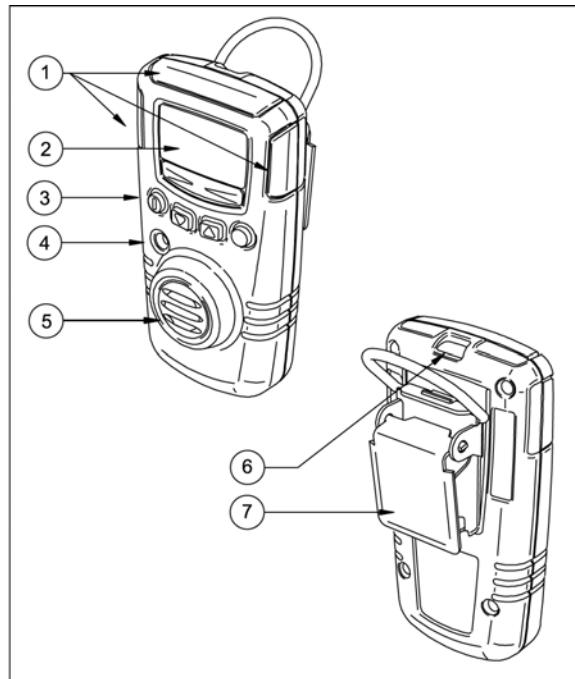
The items listed below are included with the detector. If the detector is damaged or parts are missing, contact the place of purchase immediately.

- 3 V lithium CR2-series battery.
- GasAlert Extreme O₂ model: O₂ sensor;
GasAlert Extreme CO model: CO sensor
(low H₂ sensitivity);
GasAlert Extreme CO model: CO sensor;
GasAlert Extreme H₂S model: H₂S sensor (high range);
GasAlert Extreme H₂S model: H₂S sensor (low methanol);
GasAlert Extreme H₂S model: H₂S sensor;
GasAlert Extreme PH₃ model: PH₃ sensor;
GasAlert Extreme SO₂ model: SO₂ sensor;
GasAlert Extreme Cl₂ model: Cl₂ sensor;
GasAlert Extreme NH₃ model: NH₃ sensor;
GasAlert Extreme NH₃ model: NH₃ sensor (high range);
GasAlert Extreme NO₂ model: NO₂ sensor;
GasAlert Extreme HCN model: HCN sensor;
GasAlert Extreme ETO model: ETO sensor;
GasAlert Extreme ClO₂ model: ClO₂ sensor;
GasAlert Extreme O₃ model: O₃ sensor;
GasAlert Extreme NO model: NO sensor.
- Test cap and hose.

The detector is shipped with the battery and sensor installed. To order replacement parts and accessories, refer to [Replacement Parts and Accessories](#).

To become familiar with the features and functions of the detector, study the following figures and tables:

- Figure 1 and Table 3: GasAlert Extreme Detector
(describes the detector's components).
- Figure 2 and Table 4: Display Elements
(describes the LCD screen and icons).
- Table 5: Pushbuttons
(describes the buttons on the detector).

**Figure 1.** GasAlert Extreme Detector**Table 3.** GasAlert Extreme Detector

Item	Description
1	Visual alarm
2	Liquid crystal display (LCD)
3	Pushbuttons
4	Audible alarm
5	Sensor and sensor screen
6	Infrared communication port
7	Alligator clip

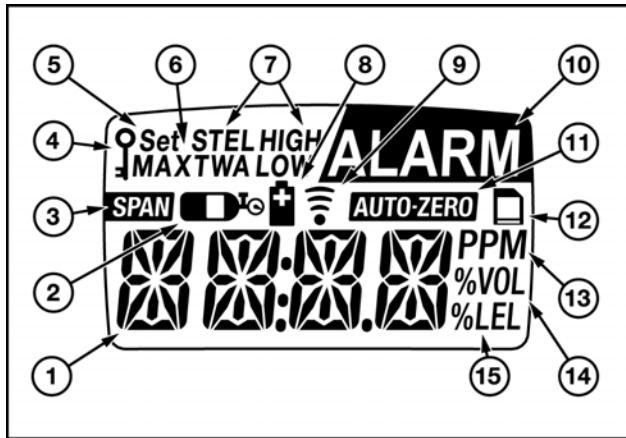


Figure 2. Display Elements

Note

When enabled, the backlight option automatically activates for 3 seconds whenever there is insufficient light to view the LCD. Press and hold (until light activates) any button to activate the backlight for 6 seconds. The detector is shipped with the backlight option enabled.

Backlight does not operate while in stealth mode.

Table 4. Display Elements

Item	Description
1	Numeric value
2	Gas cylinder
3	Automatically span sensor
4	Pass code lock
5	Set alarm setpoints and user options
6	Maximum gas exposure
7	Alarm conditions
8	Battery
9	Data transmission
10	Alarm or alarm setpoint
11	Automatically zero sensor
12	Optional datalogger indicator
13	Parts per million (ppm)
14	Percentage by volume (% vol.)
15	Percentage by lower explosive limit (% LEL) (future use)

Table 5. Pushbuttons

Pushbutton	Description
	<ul style="list-style-type: none">To activate the detector, press To enable/disable the confidence beep, while the detector is deactivated press and hold . While holding , press . This enables/disables the confidence beep while activating start-up.To deactivate the detector, press and hold until OFF displays (approximately 5 seconds). If the detector is pass code protected to prevent deactivation, PASS will display. A pass code must be entered to deactivate the detector. For more information refer to No Deactivation Pass Code Protection.
	<ul style="list-style-type: none">To decrement the displayed value or to scroll down, press To enter the user options menu, press and simultaneously and hold until OPIN and then EXIT displays (approximately 5 seconds) .To initiate calibration and setting alarm setpoints, press and hold and simultaneously until CAL. displays.
	<ul style="list-style-type: none">To increment the displayed value, press To view the TWA, STEL and maximum (MAX) gas exposures, press and simultaneously.
	<ul style="list-style-type: none">To save a displayed value, press To clear TWA, STEL, and maximum (MAX) gas exposures, press and hold for 6 seconds.To acknowledge a latched alarm, press

Activating the Detector

To activate the detector, press ①.

The detector begins a self-test.

Self-Test

When the detector is activated it performs several system tests. Verify that all tests have been performed prior to using the detector.

1. **Display Elements Test:** The LCD displays all of the screen elements.



2. **Alarm Function Test:** The audible alarm beeps, the visual alarm flashes, the backlight activates briefly, and the detector emits one vibration.

Note

The following tests are listed in the order they are automatically performed on the detector.

3. **Battery Test:** The detector tests the batteries. If the battery voltage is too low to continue, the

detector performs an automatic shutdown. Refer to [Automatic Shutdown Alarm](#).

4. **Date and Time:** The LCD displays the date and time automatically in the following order.

	Year: The LCD displays the current year (20XX).
	Month: JAN, FEB, MAR , etc.
	Day of the month: (1 to 31)
	Day of the week: MON, TUE, WED , etc.
	Hour/Minute: 00:00 hours to 23:59 hours
To adjust the date or time, refer to Clock (CLCK) option .	

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5. **Sensor Test:** The detector now tests the sensor. If the sensor test fails, the audible alarm emits a slow tone, the visual alarm flashes slowly, and the **ALARM** flashes.



If the sensor test passes, the self-test continues.

6. **Gas Type:** The LCD displays the type of gas the detector is manufactured to measure.

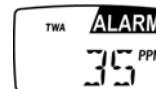


Refer to Table 1: GasAlert Extreme Models.

If the battery is low, the LCD displays the low battery icon and the self-test continues.



TWA Alarm Setpoint: The LCD displays the TWA alarm setpoint.



Note

The TWA alarm setpoint screen does not apply to O₂ detectors.

7. **STEL Alarm Setpoint:** The LCD displays the STEL alarm setpoint.



Note

The TWA alarm setpoint screen does not apply to O₂ detectors.

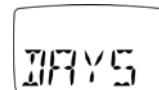
8. **Low Alarm Setpoint:** The LCD displays the low alarm setpoint.



9. **High Alarm Setpoint:** The LCD displays the high alarm setpoint.



10. **Calibration Due Test:** The LCD displays the calibration due date.



The LCD displays the number of days remaining before the detector must be calibrated. For more information, refer to [Calibration Procedures](#).

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If calibration is past due, a warning message displays.

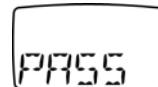


Press to acknowledge the warning message.

Depending upon if the detector is pass code protected or not, one of the following three events will occur.

1) Not Pass Code Protected: If the detector is not pass code protected, after the **CAL. PAST** message is acknowledged, the detector continues the self-test and then enters normal operating mode.

2) Pass Code Protected: If the detector is pass code protected, when **CAL. PAST** displays, press to acknowledge the message and to access the **PASS** screen. If required, refer to [Pass Code Protection Option](#).



Press or to scroll to the required pass code, and within 10 seconds press to confirm the selection. The LCD then displays the normal operating screen.

Note

Calibrate the detector before continuing operation.

If the pass code is not confirmed within 10 seconds or the pass code is incorrect, the LCD displays the following screen.



The detector then automatically deactivates.

3) Automatic Shutdown: If the pass code is not known the detector beeps and flashes eight times while the LCD displays the following screen.



The detector then automatically deactivates.

Bump Check Fail Test: If a bump check has not been performed or if the bump check was performed but failed, the detector beeps, flashes, vibrates, and the following error message displays:



Press to acknowledge the alarm.

Note

Bump check the detector before continuing operation.

For information regarding bump check tests, refer to the MicroDock II User Manual.

Self-Test Pass

If the detector passes the self-test, it enters normal operating mode. The LCD displays the ambient gas reading.



The detector begins recording immediately. It records the

- maximum (MAX) gas exposure,
- the short-term exposure levels (STEL), and
- calculates the time-weighted average (TWA).

Self-Test Fail

If the detector fails the self-test, refer to [Troubleshooting](#).

Deactivating the Detector

Note

A detector can be enabled to not deactivate by enabling a second pass code protection option. If **PASS** displays immediately after **OFF**, refer to [No Deactivation Pass Code Protection](#).

To deactivate the detector, complete the following:

Press and hold  until **OFF** displays (approximately 5 seconds).



The audible alarm beeps four times, the visual alarm flashes four times, the detector vibrates, and then powers off.

Note

If  is not held down until **OFF** displays, the detector will remain activated.

Confidence Beep

The confidence beep is used to confirm that the detector is activated and the batteries have sufficient power to respond to a hazardous level of gas.

When battery power is sufficient, the audible alarm beeps once every 5 seconds. The confidence beep stops when battery power is low. The confidence beep can be enabled or disabled.

Note

The detector is shipped with the confidence beep disabled.

To enable/disable the confidence beep, complete the following:

1. Ensure the detector is deactivated.
2. Press and hold . While holding .

When the confidence beep option is enabled, the detector automatically begins beeping when activated.

When the confidence beep option is enabled in stealth mode, the detector vibrates once every 60 seconds. For more information refer to [Stealth Option](#) and [Alarms](#).

User Options Menu

The user options menu provides access to fourteen user selections.

To access the user options menu, complete the following:

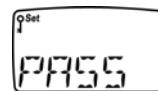
1. From the normal operating screen, press and hold and simultaneously until **OPTN** displays and then release the buttons.

The detector beeps four times, flashes four times, and vibrates while accessing the user options menu.

If the pass code protection is not enabled, the **EXIT** screen automatically displays.



If the detector is pass code protected, the following screen displays:



2. Press or to scroll to the required pass code. Press to confirm the selection and access the **EXIT** screen.

Note

If the pass code is not confirmed within 10 seconds, the following error message displays.



3. From the **EXIT** screen, press or to scroll through all of the user options.

4. Press to select a displayed option.

Note

As a safety precaution, if an option is not selected within 20 seconds the detector automatically returns to normal operating mode.

When the required activities have been performed for a selected option, the **EXIT** screen automatically displays.

5. Press or to select another option or press to exit the user options menu and return to normal operating mode.

Exit Option

When user options is entered, the **EXIT** screen displays immediately following the options (**OPTN**) screen. The LCD automatically returns to the **EXIT** screen after a user option function has been completed.

From the **EXIT** screen, use or to scroll to additional user options,

or

Press to exit user options and return to normal operating mode.

Clock Option

The clock (**CLK**) option is used to set the date (year/month/day/day of the week) and time (hour/minute) of the detector. To set the time or date complete the following:

1. From the **EXIT** screen, press or to scroll to the **CLK** option.
2. Press to select the option and access the first date/time option, the year screen. **Set** and the value(s) that is currently available to change continually flash.
3. Press or to scroll to the required year (last two numerals only) and press to confirm the selection.

Or

To bypass the year, press to retain the current value and automatically proceed to the month screen.

4. Repeat step #3 for the remaining date/time changes.
5. Press or to select another option or press to exit the user options menu and return to normal operating mode.

Note

The time and date values can only be changed in the order they are presented in this table. To bypass any setting, press . The detector automatically retains the current value and proceeds to the next date/time option.

	Year: Requires only the last two numerals of the year (00-99).
	Month: Scroll to select the required month (JAN, FEB, MAR , etc.).
	Day: Scroll to select the required day (1-31). For months that have 30 days only (1-30) will be available to select from. For Feb the options are (1-28 and 29).
	Day of the week: Scroll to select the required day (Mon, Tue, Wed , etc.).
	Time: The hour value flashes first. Scroll to select (0:00 hrs. to 23:59 hrs.).

Note

If an option is not selected or bypassed (confirmed) by pressing within 10 seconds, the LCD automatically times-out and returns to the **EXIT** screen.

If a value is selected but not confirmed, an error message displays and then proceeds to the next date/time option.



Pass Code Protection Option

The pass code protection option (**PASS**) is used to prevent access to the user options and the calibration/set alarm setpoint functions.

The pass code protection option can be enabled or disabled.

Note

The detector is shipped with the pass code protection option disabled.

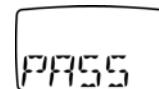
Enable Pass Code Protection

To enable pass code protection, complete the following:

Note

The pass code is provided on a separate card inside the shipping container.

1. From the **EXIT** screen in user options, press or to select the **PASS** option.



2. Press to confirm the selection.

3. Set **PASS** begins flashing. Press or to select the pass code number, and press to confirm the selection.

4. The flashing pass **ON** screen displays. Press to confirm. The LCD then returns to the user options **EXIT** screen.



5. Press **▲** or **▼** to select another user option, or press **○** to exit the user options and return to normal operating mode.

Note

*If an incorrect pass code is selected or a correct pass code is not confirmed within 10 seconds, the following error message displays and the LCD returns to the **EXIT** screen.*



Disable Pass Code Protection

When the detector is pass code protected, the key icon displays continually. To disable the pass code protection option, complete the following:

1. Press and hold **▲** and **▼** simultaneously to access the user options menu.

The **OPTN** screen displays briefly before the flashing pass code screen displays.



2. Press **▲** or **▼** to select the pass code and press **○** to confirm. The following **EXIT** screen displays.



The key icon indicates that the pass code protection is currently enabled.

3. Press **▲** or **▼** to scroll to the **PASS** option, and press **○** to confirm the selection.
4. The LCD displays a flashing **OFF** screen. Press **○** to confirm the disabling option.

Note

*To ensure if the pass code protection option is enabled/disabled, use **▲** and **▼** to toggle between the **ON** and **OFF** options. Display the desired option and press **○** to confirm the selection.*

The LCD returns to the user options **EXIT** screen.

5. Press **▲** or **▼** to select another user option, or press **○** to exit the user options and return to normal operating mode.

No Deactivation Pass Code Protection

Note

A detector can be enabled to prevent deactivation without a pass code. If requested, the detector is shipped with this option enabled permanently. This option cannot be disabled by a customer.

As a backup safety precaution, the detector can be manufactured to prevent deactivation. A separate security pass code is required to for this option and will be available to limited personnel only.

The pass code must be entered every time the detector is deactivated.

To deactivate the detector, complete the following:

1. From normal operating mode, press and hold **①** to deactivate the detector.

If the detector is pass code protected to prevent powering down, **OFF** displays briefly and then **PASS** immediately displays.



2. Press **▲** or **▼** to select the security pass code. Press **○** to confirm the selection.

The detector then deactivates.

Stealth Mode Option

The stealth (**STLH**) mode option is designed to ensure that the detector is undetected in situations that require concealment. This option is used to disable the

- audible alarms,
- visual alarms, and
- backlight.

Only the vibrate alarm remains enabled.

Note

The detector is shipped with stealth mode disabled.

To enable/disable the stealth mode, complete the following:

1. From the **EXIT** screen of the user options menu, press **▲** or **▼** to select the **STLH** option.



2. Press **○** to confirm the selection. The LCD flashes either **ON** or **OFF**.



Enabled



Disabled

3. Press **▲** or **▼** to toggle between the **ON/OFF** options. Ensure the desired option is displayed and press **○** to confirm the selection.

The LCD returns to the **EXIT** screen.

If stealth mode has been enabled, the screen displays **STLH** continually unless

- functions are being performed,
- readings are not 0 ppm for toxics, or
- reading is not 20.9% vol for oxygen.

Note

The vibrator alarm is disabled at -20°C.

4. Press or to scroll to a new user option or press to exit and return to normal operating mode.

Automatic Backlight Option

The automatic backlight (**BKLT**) option is used to enable or disable the automatic backlight of the detector. When enabled, the backlight automatically turns on for 3 seconds whenever there is insufficient light to view the LCD.

Press and hold (until backlight activates) any button to activate the backlight for 6 seconds.

Note

The detector is shipped with the automatic backlight option enabled. Backlight does not operate while in stealth mode.

To enable/disable the automatic backlight, complete the following:

1. From the **EXIT** screen of the user options menu, use or to scroll to the **BKLT** option.



2. Press to accept the option. The LCD flashes either **ON** or **OFF**.
3. Press or to toggle between the **ON/OFF** options. Ensure the desired option is displayed and press to confirm the selection.

The LCD returns to the **EXIT** screen.

Note

*The **BKLT** option is not available in the user options menu while stealth mode is enabled.*

4. Press or to scroll to a new user option or press to exit and return to normal operating mode.

Latching Alarm Option

The latch alarm (**LTCH**) alarm option is used to ensure that an alarm persists until it is acknowledged by the user.

In the event of an alarm condition, and if the high and low alarms are set to latch, the audible and visual alarms persist until the alarm is acknowledged.

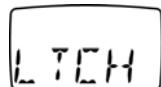
In stealth mode, the detector continues to vibrate until the alarm is acknowledged.

Note

The detector is shipped with the latching alarm option disabled.

To enable/disable the latching alarm option, complete the following:

1. From the **EXIT** screen of the user options menu, press **▲** or **▼** to scroll to the **LTCH** option.



2. Press **○** to accept the option. The LCD flashes either **ON** or **OFF**.
 3. Press **▲** or **▼** to toggle between the **ON/OFF** options. Ensure the desired option is displayed and press **○** to confirm the selection.
- The LCD returns to the **EXIT** screen.
4. Press **▲** or **▼** to scroll to a new user option or press **○** to exit and return to normal operating mode.

Automatic Oxygen (O_2) Calibration Option

Note

For oxygen detectors only.

This option is used to enable/disable the automatic oxygen (O_2) calibration. The O_2 calibration begins automatically during start-up after the calibration due screen displays.

Note

The detector is shipped with the automatic O_2 calibration option disabled.

To enable/disable the automatic O₂ calibration option, complete the following:

1. From the **EXIT** screen of the user options menu, press **▲** or **▼** to scroll to the **ACAL** option.



2. Press **○** to accept this option and display the current mode **ON** or **OFF**.
3. Press **▲** or **▼** to toggle between the **ON/OFF** options. Ensure the desired option is displayed and press **○** to confirm the selection.

The LCD returns to the **EXIT** screen.

4. Press **▲** or **▼** to scroll to a new user option or press **○** to exit and return to normal operating mode.

Calibration Past Due Option

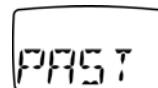
The calibration past due (**PAST**) option is used to enable an automatic shutdown during start-up if the detector is past due for calibration.

Note

The detector is shipped with the calibration past due shutdown option disabled.

To enable/disable the calibration past due automatic shutdown option, complete the following:

1. From the **EXIT** screen of the user options menu, press **▲** or **▼** to scroll to the **PAST** option.



2. Press **○** to accept the option and to display the current mode (**ON** or **OFF**).

3. Press **▲** or **▼** to toggle between the **ON/OFF** options. Ensure the desired option is displayed and press **○** to confirm the selection.

The LCD returns to the **EXIT** screen.

4. Press **▲** or **▼** to scroll to a new user option or press **○** to exit and return to normal operating mode.

Languages

The detector can be set to display text in different languages. Refer to the following language options:

Portuguese Option

The Portuguese (**PORT**) option is used to convert all of the LCD screens to display the text in Portuguese.

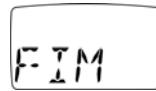
Note

If the language option is included, the detector is shipped with English selected as the default.

1. From the **EXIT** screen of the user options menu, press **▲** or **▼** to scroll to the **PORT** option.



2. Press **○** to accept the option. The LCD then displays the **EXIT** screen in Portuguese.



3. Press **▲** or **▼** to scroll to a new user option or press **○** to exit and return to normal operating mode.

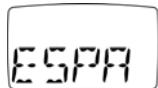
Spanish Option

The Spanish (**ESPA**) option is used to convert all of the LCD screens to display the text in Spanish.

Note

If the multi-language option is included, the detector is shipped with English selected as the default.

1. From the **EXIT** screen of the user options menu, press or to scroll to the **ESPA** option.



2. Press to accept the option. The LCD then displays the **EXIT** screen in Spanish.



3. Press or to scroll to a new user option or press to exit and return to normal operating mode.

German Option

The German (**DEUT**) option is used to convert all of the LCD screens to display the text in German.

Note

If the language option is included, the detector is shipped with English selected as the default.

1. From the **EXIT** screen of the user options menu, press or to scroll to the **DEUT** option.



2. Press to accept the option. The LCD then displays the **EXIT** screen in German.



3. Press or to scroll to a new user option or press to exit and return to normal operating mode.

French Option

The French (**FRAN**) option is used to convert all of the LCD screens to display the text in French.

Note

If the language option is included, the detector is shipped with English selected as the default.

1. From the **EXIT** screen of the user options menu, press or to scroll to the **FRAN** option.



2. Press to accept the option. The LCD then displays the **EXIT** screen in French.



3. Press or to scroll to a new user option or press to exit and return to normal operating mode.

English Option

The English (**ENGL**) option is used to convert all of the LCD screens to display the text in English.

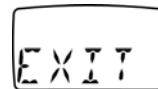
Note

If the language option is included, the detector is shipped with English selected as the default.

1. From the **EXIT** screen of the user options menu, press or to scroll to the **ENGL** option.



2. Press to accept the option. The LCD then displays the **EXIT** screen in English.



3. Press or to scroll to a new user option or press to exit and return to normal operating mode.

Datalogger Sampling Rate Option

The datalogger sampling rate (**RATE**) option is used determine how often the detector is to record a sample. The datalogger value ranges from **1** to **60** seconds.

Note

*The detector is shipped with the factory default set to sample every **5** seconds.*

To adjust the datalogger sampling rate, complete the following:

1. From the **EXIT** screen of the user options menu, press **▲** and **▼** to scroll to the **RATE** option.



2. Press **○** to select the option and display the sample rate screen.



3. The sample rate screen displays the current selected rate. Press **▲** or **▼** to scroll to a new rate and press **○** to save the new value.
4. Press **▲** or **▼** to scroll to a new user option or press **○** to exit and return to normal operating mode.

Data Transfer Option

The data transfer (**SEND**) option is used to transfer the datalog/event log information from the detector to the PC.

Note

An IR DataLink (or other BW accessory) is required to transfer the data from the detector to the PC.

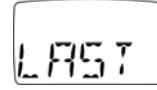
To transfer data, complete the following:

1. Connect the IR DataLink (or other BW accessory) to the detector and the PC.

Refer to the IR DataLink Instruction Sheet.
2. From the **EXIT** screen of the user options menu, press **▲** or **▼** to scroll to the **SEND** option.



3. Press **○** to accept the option and to access the data transfer option screens.
4. Select one of the following options to transfer data.

 A photograph of the LCD screen showing the word "EVENT" in a smaller font than the previous screen, centered within a similar rounded rectangular frame.	Press ▲ or ▼ to scroll to the event (EVENT) option. Press ○ to automatically transfer all of the events.
 A photograph of the LCD screen showing the word "LAST" in a smaller font than the previous screen, centered within a similar rounded rectangular frame.	Press ▲ or ▼ to scroll to the last (LAST) option. Press ○ to automatically send all of the datalogs since the last time they were downloaded.
 A photograph of the LCD screen showing the word "ALL" in a smaller font than the previous screen, centered within a similar rounded rectangular frame.	Press ▲ or ▼ to scroll to the all (ALL) option. Press ○ to automatically send all of the datalogs that are saved on the detector.

When the transfer(s) is complete, the LCD automatically returns to the **EXIT** screen.

LAST and ALL Transfers

If the **LAST** or **ALL** option is selected, the LCD displays a countdown and the data transmission icon to notify that the data is transferring.



Note

The number that the countdown begins at is dependant upon the amount of data that is being transferred.

EVNT Transfer

When event logs are transferred, nothing displays on the LCD as there is little data to transfer.

Unsuccessful Transfer

If the connection between the detector and the IR DataLink is disturbed during a transfer, the following error message displays.



The LCD then returns to the **EXIT** screen.

1. From the PC, save the previously transferred data to ensure that it will not be deleted.
2. Repeat steps #3-5 (back to the beginning of the Data Transfer Option section).
3. From the detector, select **LAST** to automatically resume the transfer from where it stopped sending.

Or

Select **ALL** to transfer all of the data again.

Datalog and Event Log

The GasAlert Extreme datalogger version allows the detector to record various information so a report can be compiled.

Datalog

Datalog information is recorded based upon the sampling rate set in the detector user options. The following information is recorded in a datalog:

- The date and time;
- The detector serial number;
- The type of gas the detector monitors;
- The current gas reading;
- The sensor status;
- The detector status;
- Pass code protect is on/off;
- The period that STEL is calculated;

- Confidence beep is on/off;
- Automatic backlight is on/off;
- Stealth mode is on/off;
- Latching alarm is on/off;
- The calibration past due user option is on/off; and
- The language that the LCD displays.

Event Log

An event log is data that is recorded when an event (i.e., an alarm) occurs. The following information is recorded in an event log:

- The detector serial number;
- The type of exposure the detector experienced;
- The time the alarm started and ended; and
- The peak exposure of the alarm.

Alarms

Table 6 describes detector alarms and shows how the LCD looks for each alarm.

Table 7 describes the computed gas exposures.

Table 6. Alarms

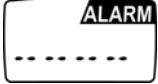
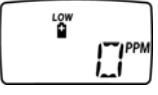
Alarm	Display	Alarm	Display
Low Alarm: <ul style="list-style-type: none">• Slow tone• Slow flash• ALARM flashes• Slow vibrations		TWA Alarm: <ul style="list-style-type: none">• Slow tone• Slow flash• ALARM flashes• Slow vibrations	
High Alarm: <ul style="list-style-type: none">• Fast tone• Fast flash• ALARM flashes• Fast vibrations		STEL Alarm: <ul style="list-style-type: none">• Fast tone• Fast flash• ALARM flashes• Fast vibrations	
Sensor Alarm: <ul style="list-style-type: none">• Slow tone• Slow flash• ALARM flashes• Slow vibrations		Low Battery Alarm: <ul style="list-style-type: none">• One beep and one flash every 5 seconds, and one quick vibration every minute (when confidence beep is disabled).• No beeps, flashes, or vibrations (when confidence beep is enabled)• LOW battery icon displays	

Table 6. Alarms (cont.)

Alarm	Display	Alarm	Display
Automatic Shutdown Alarm: (Low battery) <ul style="list-style-type: none"> Eight beeps, flashes, and vibrations LOW  displays 		Automatic Shutdown Alarm: (Calibration past) <ul style="list-style-type: none"> Eight beeps, flashes, and vibrations 	
After Automatic Shutdown: (Low battery) <ul style="list-style-type: none"> No tone No flash or vibrations  displays for a short time 		Confidence Beep: <ul style="list-style-type: none"> One beep every 5 seconds One quick vibration per minute 	

Note

During an alarm condition, the detector activates the backlight and the LCD displays the current ambient gas reading.

The high alarm and STEL alarm have the same priority. A high alarm and/or STEL alarm override a low alarm and/or TWA alarm. To check STEL and TWA alarms specifically, press and hold  and  simultaneously.

The vibrator alarm is disabled at -20°C.

Computed Gas Exposures

⚠ Warning

To avoid possible personal injury, do not deactivate the detector during a work shift. The detector automatically resets the TWA, STEL, and MAX gas exposures at start-up. If the detector is restarted during a work shift, the values will not reflect the entire work shift.

Table 7. Computed Gas Exposures

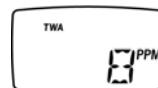
Gas Exposure	Description
TWA	<ul style="list-style-type: none">Time-weighted average based on an 8-hour workday.Accumulated value.
STEL	<ul style="list-style-type: none">Short-term exposure limit based on a 15-minute period.Accumulated value.
MAX*	<ul style="list-style-type: none">Highest gas level encountered during the period the detector is turned on.

*Maximum gas exposure for oxygen describes the furthest level reached from 20.9% vol.

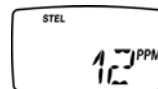
Viewing Gas Exposures

Toxic Gases

Press and simultaneously. The LCD displays the TWA gas exposure first.



The LCD next displays the STEL gas exposure.



Lastly, the LCD displays the MAX gas exposure.



Press and hold for 6 seconds to clear the TWA, STEL, and MAX gas exposure. The detector emits two beeps and two vibrations to confirm that the exposures have been cleared.

Oxygen

For oxygen detectors, press and simultaneously to view both the maximum low and maximum high levels of oxygen exposure.



Gas Alarm Setpoints

The detector gas alarm setpoints trigger the gas alarms that are described in Table 8.

Table 8. Gas Alarm Setpoints

Alarm	Condition
TWA alarm	TWA above TWA alarm setpoint. (O ₂ : not applicable)
STEL alarm	STEL above STEL alarm setpoint. (O ₂ : not applicable)
Low alarm	Toxic gases: Ambient gas level above low alarm setpoint. O ₂ : ambient gas level may be set to above or below 20.9%.
High alarm	Toxic gases: ambient gas level above high alarm setpoint. O ₂ : ambient gas level may be set to above or below 20.9%.

Resetting Gas Alarm Setpoints**Note**

Standard factory alarm setpoints vary by region.

Table 9 lists the factory alarm setpoints.

To change the factory alarm setpoints, refer to [Calibration and Setting Alarm Setpoints](#).

Note

To disable an alarm, set the alarm setpoint to 0.

The ETO sensor is extremely cross sensitive and it responds strongly to CO.

Table 9. Factory Alarm Setpoints

Gas	TWA	STEL	Low	High
O ₂	N/A	N/A	19.5% vol.	22.5% vol.
CO (low H ₂)	35 ppm	200 ppm	35 ppm	200 ppm
CO	35 ppm	200 ppm	35 ppm	200 ppm
H ₂ S (high range)	10 ppm	15 ppm	10 ppm	15 ppm
H ₂ S (low methanol)	10 ppm	15 ppm	10 ppm	15 ppm
H ₂ S	10 ppm	15 ppm	10 ppm	15 ppm

Gas	TWA	STEL	Low	High
PH ₃	0.3 ppm	1.0 ppm	0.3 ppm	1.0 ppm
SO ₂	2.0 ppm	5.0 ppm	2.0 ppm	5.0 ppm
Cl ₂	0.5 ppm	1.0 ppm	0.5 ppm	1.0 ppm
NH ₃	25 ppm	35 ppm	25 ppm	50 ppm
NH ₃ (high range)	25 ppm	35 ppm	25 ppm	50 ppm
NO ₂	2.0 ppm	5.0 ppm	2.0 ppm	5.0 ppm
HCN	4.7 ppm	10.0 ppm	4.7 ppm	10.0 ppm
ETO	1.0 ppm	5.0 ppm	1.0 ppm	5.0 ppm
ClO ₂	0.10 ppm	0.30 ppm	0.10 ppm	0.30 ppm
O ₃	0.10 ppm	0.10 ppm	0.10 ppm	0.20 ppm
NO	25 ppm	25 ppm	25 ppm	25 ppm

Stopping a Gas Alarm

The low and high alarms stop when the ambient gas level returns to the acceptable range.

The detector computes the TWA and STEL value. If the value is above the alarm setpoint, the detector activates the TWA and/or the STEL alarm. To stop the TWA and/or STEL alarm, press and hold  for 6 seconds, or deactivate the detector.

If the detector is pass code protected to prevent deactivation, refer to [No Deactivation Pass Code Protection](#).

Acknowledge Latched Alarm

Until it is acknowledged, if an alarm is set to latch the audible and visual alarms persist in the event of an alarm condition.

To acknowledge a latched alarm condition, press  to reset the latched alarm when the gas level has dropped below the alarm setpoint.

Sensor Alarm

The detector tests for a missing or defective sensor during the activation self-test. Refer to [Troubleshooting](#).

Low Battery Alarm

The detector tests the battery during the activation self-test and continuously thereafter. If the battery voltage is low, the detector activates the low battery alarm.

The low battery alarm continues until the battery is replaced or the battery power is almost depleted. If the battery voltage drops too low, the detector executes an automatic shutdown.

Note

If the confidence beep is enabled, the audible alarm does not beep during a low battery alarm. Refer to [Confidence Beep](#).

Automatic Shutdown Alarm

There are two situations when an automatic shutdown alarm occurs:

1. If the battery voltage is in immediate danger of dropping below the minimum operating voltage, the audible alarm beeps eight times, the visual alarm flashes eight times, and the detector emits eight vibrations. After 3 seconds, the LCD powers off and the detector stops normal operation. The LCD periodically displays the low battery icon  until the battery power is depleted.

For directions about how to replace the battery, refer to [Replacing the Battery or Sensor](#).

Note

The low battery alarm continues for approximately 30 minutes before an automatic shutdown occurs.

2. If the calibration past protection user option is active and the detector is past the calibration due date, the detector performs an automatic shutdown.

Calibration and Setting Alarm Setpoints

Guidelines

When calibrating the detector, adhere to the following guidelines.

- Recommended gas mixture:
O₂: clean air, 20.9% vol.
CO (low H₂ sensitivity): 50 to 500 ppm balance N₂
CO: 50 to 500 ppm balance N₂
H₂S (high range): 10 to 100 ppm balance N₂
H₂S (low methanol): 10 to 100 ppm balance N₂
H₂S: 10 to 100 ppm balance N₂
PH₃: 1 to 5 ppm balance N₂
SO₂: 10 to 50 ppm balance N₂
Cl₂: 3 to 25 ppm balance N₂
NH₃: 20 to 100 ppm balance N₂
NH₃: (high range) 20 to 100 ppm balance N₂
NO₂: 5 to 50 ppm balance N₂
HCN: 5 to 20 ppm balance N₂
ETO: 5 to 50 ppm balance N₂
ClO₂: 0.1 to 1.0 ppm balance N₂
O₃: 0.1 to 1.0 ppm balance N₂
NO: 10 to 250 ppm balance N₂
- For ETO detectors (before each day's use) allow the instrument to fully stabilize in the temperature that it is to be operated in and then zero the detector.

- It is necessary to periodically re-zero the ETO detector.
- Calibration accuracy is never better than the calibration gas accuracy. BW Technologies recommends a premium grade calibration gas. Gases with the National Institute of Standards and Technology (NIST) traceable accuracy will improve the validity of the calibration. Do not use a gas cylinder beyond its expiration date.
- Calibrate a new sensor before use. Allow the sensor to stabilize before starting calibration (used: 60 seconds; new: 5 minutes).
- Calibrate the detector at least once every 180 days (for HCN detectors calibrate at least once every 90 days), depending upon use and sensor exposure to poisons and contaminants.
- Calibrate the detector if the ambient gas display varies at start-up.
- It is best to calibrate the sensor before changing the alarm setpoints.
- Calibrate only in a clean atmosphere, which is free of background gas.
- To disable an alarm, set the alarm setpoint to zero.
- If a certified calibration is required, contact [BW Technologies](#).

Note

A generator must be used to calibrate O₃, ClO₂, and Cl₂ GasAlert Extreme sensors.

Test Cap

The calibration cap and hose that are shipped with the detector simplifies the sensor testing and calibration.

Refer to Table 10 and Figure 3 for installation information.

Note

Only use the calibration cap during the calibration process.

Table 10. Test Cap

Item	Description
1	Test cap
2	Hose
3	Regulator and gas cylinder

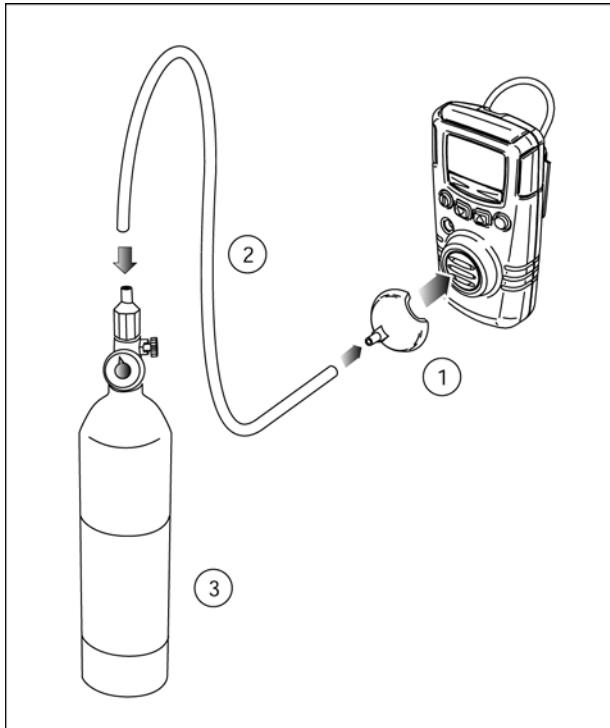


Figure 3. Test Cap

Calibration Procedure

The calibration (**CAL.**) process requires several functions, some of which can be bypassed. A note is added to each option that can be bypassed.

Start Calibration

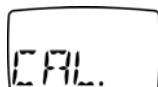
To calibrate the detector and set the corresponding alarm setpoints, perform the following procedure.

Note

*To quit at any point, press **①**. The detector retains any saved values and emits four beeps and four vibrations before returning to normal operation.*

Calibrate O₂ in clean air.

1. From normal operating mode, press and hold **○** and **☒** simultaneously until the alarm beeps, flashes, and vibrates four times. The **CAL.** screen then displays.



After the **CAL.** Screen displays, the detector beeps once and the auto zero screen displays.

Auto Zero

The auto zero function automatically zeros the toxic sensors and calibrates the O₂ sensor.



2. The LCD flashes **Auto Zero** while the detector automatically zeroes the sensor. When the auto zero is complete the audible alarm beeps twice.

Note

Do not apply the calibration gas until the LCD displays the flashing gas cylinder icon; otherwise, the auto zero step will fail.

Auto Zero Fail

If the sensor fails auto zero, an error message displays.



The detector then bypasses the sensor span and automatically proceeds to the alarm setpoints.

Press to exit the calibration/alarm setpoint screens and to return to normal operating mode.

Restart the calibration procedures in an atmosphere that is free of the targeted gas. If auto zero fails a second time, deactivate and then reactivate the detector to test the sensors.

If the auto zero passes and the pass code protection is disabled, the detector automatically proceeds to the auto span function.

Pass Code Protected

After a successful auto zero, and if the pass code protected option is enabled, the **PASS** code protection screen displays. When enabled, the pass code is required to access the auto span and alarm setpoint functions.



3. Press or to scroll to the required pass code and press to confirm. For additional information, refer to [Pass Code Protection Option](#).

If the correct code is entered within 10 seconds, the detector beeps twice and automatically proceeds to the set span screen.



If the pass code is selected incorrectly or if the pass code is correct but not confirmed within 10 seconds, the LCD displays the following error message.



The detector then beeps four times and automatically returns to normal operation.

Set Span

Note

To bypass the set span function, press \textcircled{O} to automatically proceed to the span screen.

The set span function is used to input a new calibration gas concentration.



The **Set SPAN** screen flashes.

4. Press \texttriangle or \textsquare to select the required gas concentration. The detector value must match the concentration value of the calibration gas.

Note

If a new value is selected but not confirmed within 10 seconds by pressing \textcircled{O} , the detector rejects the new value. The LCD displays a **NO** error message, the audible alarm beeps six times, and the detector retains the original value.

5. Press \textcircled{O} to save the new value and proceed to the span screen.



Span

Note

To bypass the span function, press \textcircled{O} to automatically proceed to the alarm setpoint screens. If the span is bypassed, the calibration due date cannot be changed.

Note

Verify that the calibration gas being used matches the span concentration values that are defined for the detector. For more information, refer to Span Concentration.

The set span screen displays a flashing gas cylinder.

Note

The flashing gas cylinder icon does not display for oxygen (O_2) detectors.

6. Apply the calibration gas.
7. Apply gas to the sensor at a flow rate of 500 ml/min.
(for NH_3 , Cl_2 , and ETO: 1000 ml/min.)

The gas readings change as gas is applied to the sensor. When the detector senses a sufficient concentration of gas (approximately 30 seconds), the audible alarm beeps once.

The detector then begins spanning the sensor as follows:

- NH_3 , Cl_2 , ClO_2 , O_3 , and ETO: 5 minutes;
- O_2 : 30 seconds;
- other gases: 2 minutes (approximately).

The audible alarm beeps three times when the span is complete.

Successful Span

If the span is successful, the LCD automatically displays the calibration due date screen.

Unsuccessful Span

If the detector fails to span a sensor successfully, the LCD displays an error message.



The detector flashes, vibrates, and emits a long tone and then automatically proceeds to the alarm setpoint screens.

If the span fails confirm that

- gas is being applied to the sensor,
- the sensor is detecting a sufficient gas concentration within 30 seconds, and
- the gas concentration has not dropped significantly during the 2-minute span.

If the span is still unsuccessful, attach a new gas cylinder.

If the span continues to be unsuccessful, replace the sensor.

Refer to [Replacing the Battery or Sensor](#).

Setting the Calibration Due Date

After a successful calibration, the LCD displays the **CAL.DUE** screens and the number of days remaining before the next calibration is due.



Note

To bypass the calibration due notification, press . The LCD automatically proceeds to the TWA alarm setpoint.

BW Technologies recommends that the detector be calibrated every 180 days (6 months). The detector is shipped with the factory default setting of 180 days.

8. Press or to scroll to the required value (1 to 365).
9. Press to save the new value and automatically proceed to the TWA alarm setpoint screen.

Note

If the new value is not confirmed within 10 seconds after selecting, the detector automatically retains the existing value. The new value that is selected becomes the default value.

Setting the TWA Alarm Setpoint

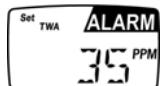
Note

To bypass and retain the current TWA alarm setpoint value, press . The LCD automatically proceeds to the STEL alarm setpoint.

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When the **CAL DUE** function has been completed, the **Set TWA** alarm setpoint screen automatically displays.



10. Press **▲** or **▼** to scroll to the required value.
11. Press **○** to save the new value and proceed to the STEL alarm setpoint.

Note

If the new value is not confirmed within 10 seconds after selecting, the detector automatically retains the existing value and proceeds to the next alarm setpoint.

Setting the STEL Alarm Setpoint

Note

*To bypass and retain the current STEL alarm setpoint value, press **○**. The LCD automatically proceeds to the low alarm setpoint.*

When the TWA alarm setpoint value has been changed or bypassed, the **Set STEL** alarm setpoint screen displays.



12. Press **▲** or **▼** to scroll to the required value.
13. Press **○** to save the new value and proceed to the low alarm setpoint.

Note

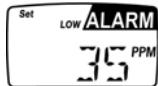
If the new value is not confirmed within 10 seconds after selecting, the detector automatically retains the existing value.

Setting the Low Alarm Setpoint

Note

*To bypass and retain the current low alarm setpoint value, press **○**. The LCD automatically proceeds to the high alarm setpoint.*

When the STEL alarm setpoint value has been changed or bypassed, the **Set LOW** alarm setpoint screen displays.



14. Press or to scroll to the required value.
15. Press to save the new value and proceed to the high alarm setpoint.

Note

If the new value is not confirmed within 10 seconds after selecting, the detector automatically retains the existing value.

Setting the High Alarm Setpoint

Note

To bypass and retain the current high alarm setpoint value, press . The detector then returns to the normal operating mode.

When the low alarm setpoint value has been changed or bypassed, the **Set HIGH** alarm setpoint screen displays.



16. Press or to scroll to the required value.
17. Press to save the new value and return to normal operating mode.

Note

If the new value is not confirmed within 10 seconds after selecting, the detector automatically retains the existing value.

When the calibration procedures are complete, the detector beeps, flashes, and vibrates four times before returning to normal operating mode.

Verification

After calibration is complete and the detector is in normal operating mode, test the detector using a gas cylinder other than the one used for calibration. The gas concentration should not exceed the sensor's detection range. Verify that the detector LCD displays the expected concentration.

Maintenance

To maintain the detector in good operating condition, perform the following basic maintenance as required:

- Calibrate, bump test, and inspect the detector on a regular schedule.
- Maintain an operations log of all maintenance, calibrations, and alarm events.
- Clean the exterior with a soft damp cloth. Do not use solvents, soaps, or polishes.
- Do not immerse the detector in liquids.

Cleaning a Sensor Screen

Perform the following as required:

1. Remove the screen.
2. Using a soft, clean brush, wash with clean, warm water.
3. Ensure the screen is dry before reinserting back into the detector.

Cleaning a Sensor

Remove the sensor. Clean using a soft, clean brush. Do not use water.

Note

BW Technologies recommends that a test gas be applied to test the detector's response to gas following any cleaning procedure.

Clearing a Sensor

Each sensor has a high degree of resistance to common vapors and gases. A sensor typically clears within 10-30 minutes in a clean atmosphere that is free of hazards.

Note

Do not expose a sensor to the vapors of inorganic solvents, such as paint fumes or organic solvents.

Replacing the Battery or Sensor

⚠ Warning

To avoid possible personal injury:

Replace the battery as soon as the detector emits a low battery alarm.

Use only the Energizer 1CR2 battery.

Use only the sensor specifically designed for your GasAlert Extreme model. Otherwise, the detector will not monitor the target gas. Refer to [Replacement Parts and Accessories](#).

Note

When the battery is removed from the detector, the clock reverts back to the default value.

To preserve the life of the battery, deactivate the detector when not in use.

Figure 4 and Table 11 illustrate how to replace the battery or sensor. If the detector is activated, deactivate it before replacing the battery or sensor. Use a Phillips screwdriver to loosen and tighten any screws.

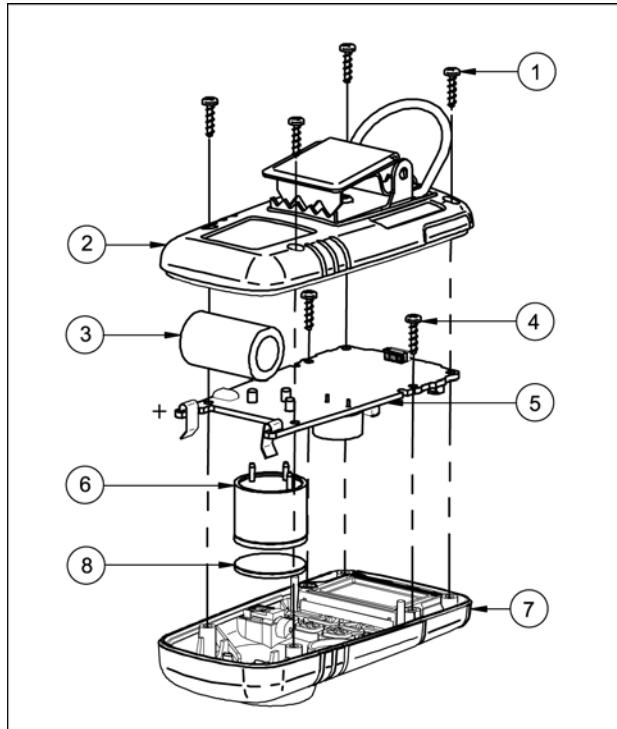
To prevent damage, do not use excessive force when removing and inserting the sensor. Gently rock back and forth to remove a tightly held sensor.

When inserting the sensor screen back into the detector, ensure that the shiny side is facing away from the sensor.

The sensor provides consistent and accurate ambient gas readings. The sensor lasts 2 years under normal operation.

After replacing a sensor or battery, ensure that the detector's back screws are torque to 3-4 in-lbs in a crisscross pattern to ensure a proper environment seal.

For additional information regarding problems caused by a sensor requiring calibration or replacement, refer to [Troubleshooting](#).

**Figure 4. Replacing the Battery or Sensor****Table 11. Replacing the Battery or Sensor**

Item	Description
1	Detector back screws (4)
2	Detector back
3	Battery
4	Main board screws (2)
5	Main board
6	Sensor
7	Detector front
8	Sensor screen

Troubleshooting

The electronics of the detector are protected from variations in humidity and corrosive atmospheres. If a problem is encountered, try the solutions listed in the following table.

If you still are unable to correct the problem, contact [BW Technologies](#).

Table 12. Troubleshooting Tips

Problem	Possible Cause	Solution
The detector does not activate.	<ul style="list-style-type: none">→ No battery→ Depleted battery→ Damaged or defective detector→ Reversed battery	<ul style="list-style-type: none">→ Install battery→ Replace battery→ Contact BW→ Reinstall battery correctly
The detector enters alarm mode immediately when it is activated.	<ul style="list-style-type: none">→ Sensor needs to stabilize→ Low battery alarm→ Sensor alarm	<ul style="list-style-type: none">→ Used sensor: wait 60 seconds New sensor: wait 5 minutes→ Replace battery→ Replace sensor

Table 12. Troubleshooting Tips (cont.)

Problem	Possible Cause	Solution
The activation self-test fails during one of the checks.	<ul style="list-style-type: none">→ General fault→ Alarm setpoints are incorrect	<ul style="list-style-type: none">→ Contact BW→ Reset alarm setpoints
The detector does not display normal ambient gas reading after activation self-test.	<ul style="list-style-type: none">→ Sensor not stabilized→ Detector requires calibration→ Targeted gas is present	<ul style="list-style-type: none">→ Used sensor: wait 60 seconds New sensor: wait 5 minutes→ Calibrate detector→ Detector is operating properly. Use caution in suspect areas.
The detector does not respond to the pushbuttons.	<ul style="list-style-type: none">→ Battery is depleted→ Detector is performing operations that do not require user input	<ul style="list-style-type: none">→ Replace battery→ Pushbutton operation restores automatically when the operation ends
The detector does not accurately measure the gas.	<ul style="list-style-type: none">→ Detector requires calibration→ Detector is colder/hotter than ambient gas→ Sensor screen is blocked	<ul style="list-style-type: none">→ Calibrate sensor→ Allow detector to acquire ambient temperature before use→ Clean sensor screen

Table 12. Troubleshooting Tips (cont.)

Problem	Possible Cause	Solution
The detector does not enter alarm mode.	<ul style="list-style-type: none"> → Alarm setpoint(s) are set incorrectly → Alarm setpoint(s) set to zero → Detector is in calibration mode 	<ul style="list-style-type: none"> → Reset alarm setpoints → Reset alarm setpoints → Complete the calibration procedure
The detector intermittently enters alarm mode without apparent reason.	<ul style="list-style-type: none"> → Ambient gas levels are near alarm setpoint or the sensor is exposed to a puff of the targeted gas → Alarms set incorrectly → Missing or faulty sensor 	<ul style="list-style-type: none"> → Detector is operating normally. Use caution in suspect areas. Check MAX gas exposure reading. → Reset alarm setpoints → Replace sensor
The detector automatically deactivates.	<ul style="list-style-type: none"> → Automatic shutdown feature activated due to weak battery 	<ul style="list-style-type: none"> → Replace battery
Detector does not auto zero or calibrate	<ul style="list-style-type: none"> → Sensor may be expired 	<ul style="list-style-type: none"> → Change the sensor
O ₂ sensor reading is erratic	<ul style="list-style-type: none"> → Sensor may be expired 	<ul style="list-style-type: none"> → Change the sensor

Replacement Parts and Accessories**⚠ Warning**

To avoid personal injury or damage to the detector, use only specified replacement parts.

To order any parts or accessories, contact [BW Technologies](#).

Table 13. Replacement Parts and Accessories

Model No.	Description	Qty
SR-X10	Replacement O ₂ sensor	1
SR-M204	Replacement CO (low H ₂ sensitivity) sensor	1
PS-RM04	Replacement CO sensor	1
PS-RH04S	Replacement H ₂ S sensor	1
SR-P04	Replacement PH ₃ sensor	1
PS-RS04	Replacement SO ₂ sensor	1
PS-RC10	Replacement Cl ₂ sensor	1
SR-A04	Replacement NH ₃ sensor	1
SR-A204	Replacement NH ₃ sensor (high range)	1
PS-RD04	Replacement NO ₂ sensor	1
PS-RZ10	Replacement HCN sensor	1
SR-E04	Replacement ETO sensor	1

Model No.	Description	Qty
SR-V04	Replacement ClO ₂ sensor	1
SR-G04	Replacement O ₃ sensor	1
SR-N04	Replacement NO sensor	1
GA-SS	Sensor screens	10
GA-TC-1	Test cap and hose	1
GA-HC-1	Hard hat clip	1
GA-AG-1	Alligator clip (non-conductive)	1
GA-AG-2	Alligator clip (stainless-steel)	1
REG-0.5	Gas regulator (0.5 L/min)	1
G0042-H25	Calibration gas, H ₂ S (58 L)	1
CG2-M-200-103	Calibration gas, CO (103 L)	1
CG2-S-25	Calibration gas, SO ₂ (58 L)	1
CG2-C-5	Calibration gas, Cl ₂ (58 L)	1
CG2-Z-10	Calibration gas, HCN (58 L)	1
CG2-D-10	Calibration gas, NO ₂ (58 L)	1
CG2-P-1-58	Calibration gas, PH ₃ (58 L)	1
GA-USB2	IR DataLink	1

Specifications

Operating temperature:

H₂S, SO₂, HCN: -40°C to +50°C (-40°F to +122°F)
CO: -30°C to +50°C (-22°F to +122°F)
NH₃ (high range): -20° to +40°C (-4°F to +104°F)
Other gases: -20°C to +50°C (-4°F to +122°F)

Operating humidity:

CO, H₂S, SO₂, Cl₂, HCN, NO₂, NH₃, PH₃, ETO, NO, O₃:
15% to 90% relative humidity (non-condensing)
Cl₂: 10% to 95% relative humidity (non-condensing)
ClO₂: 15% to 95% relative humidity (non-condensing)
O₂: 0% to 99% relative humidity (non-condensing)

Detection ranges:

GasAlert Extreme O₂: 0 – 30.0% vol. (0.1% vol. increments)
GasAlert Extreme CO: 0 – 1000 ppm (1 ppm increments)
GasAlert Extreme CO (low H₂ sensitivity): 0 – 1000 ppm
(1 ppm increments)
GasAlert Extreme H₂S: 0 – 100 ppm (1 ppm increments)
GasAlert Extreme H₂S (high range): 0 – 500 ppm
(1 ppm increments)
GasAlert Extreme H₂S (low methanol): 0 – 100 ppm
(1 ppm increments)
GasAlert Extreme PH₃: 0 – 5.0 ppm (0.1 ppm increments)
GasAlert Extreme SO₂: 0 – 100.0 ppm (0.1 ppm increments)
GasAlert Extreme Cl₂: 0 – 50.0 ppm (0.1 ppm increments)
GasAlert Extreme NH₃: 0 – 100 ppm (1 ppm increments)

GasAlert Extreme NH₃: (high range) 0 – 400 ppm
(1 ppm increments)

GasAlert Extreme NO₂: 0 – 100.0 ppm (0.1 ppm increments)
GasAlert Extreme HCN: 0 – 30.0 ppm (0.1 ppm increments)
GasAlert Extreme ETO: 0 – 100.0 ppm (0.1 ppm increments)
GasAlert Extreme ClO₂: 0 – 1 ppm (0.01 ppm increments)
GasAlert Extreme O₃: 0 – 1 ppm (0.01 ppm increments)
GasAlert Extreme NO: 0 – 250 ppm (1 ppm increments)

Sensor type: Plug-in electrochemical cells

Calibration: Auto zero, set span, and span sensor

Alarm conditions: TWA alarm, STEL alarm, low alarm, high alarm, sensor alarm, low battery alarm, confidence beep, automatic shutdown alarm.

Audible alarm: 95 dB at 0.3 m (1 ft.) typical

Visual alarm: Red light-emitting diode (LED)

Display: Alpha-numeric liquid crystal display (LCD)

Backlight: Automatically activates for 3 seconds whenever there is insufficient light to view the display and during alarm conditions. Any pushbutton reactivates the backlight for 6 seconds.

Self-test: Initiated upon activation

Battery test: Every 0.5 seconds

Battery: 3 V lithium Energizer 1CR2-series battery

Intrinsic safety:

Classified by UL to both U.S. and Canadian Standards as Intrinsically Safe for Class I, Division 1, Group A, B, C, D European Explosives Protection EEx ia IIC

CE 0539 ☺ II 1 G DEMKO 04 ATEX 03 36363

IECEx

ABS Type Approved: VA-348-169-X

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules and ICES-003 Canadian EMI requirements. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that radio interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

General Specifications for Datalogger Units

Storage: Maximum of 8 months of data at 5 second intervals (based on a normal workweek).

Memory Type: Wrap-around memory ensures most recent data is always saved.

Sample Rate: One reading every 5 seconds (standard).

Data Recorded: All sensor readings, all alarm conditions, calibrations, event flags, battery status, sensor status, confidence beep activation, and detector status along with the time and date and the detector serial number.

Indicators: Icon advising datalogger is operating normally.

Transfer Accessory: IR DataLink or other BW accessory.

Support:

BW Excel Datalog Manager (EDM): This software organizes GasAlert Extreme datalog and event log files into a readable report.

Fleet Manager CD Support: This software organizes GasAlert Extreme datalog and event log files into a readable report.



D5561/5 English

iERP: 119065

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